CIRCUIT INTEGRITY WIRE & CABLE:

DESIGNED FOR LEGACY & FUTURE SYSTEMS SURVIVAL

C.I. TEST: UL2196

- COGEBI, Inc., Dover, NH

Introduction

- All emergency system components (Alarms; Communications {data,voice,video}; Signal & Power) require conductive & fiber optic cables.
- If your cable loses integrity…your system fails !
- Circuit Integrity or C.I. buys you time.

History

- Dedicated, single function wire & cable used to be the norm.
- Inexpensive jacketing compounds were used for their low specific gravity.
- Compounds tried to only address flame propagation but, not flame resistance or toxicity.
- Wire & cable survivability was never taken into consideration during the design phase.
- In 1982 the Falklands War became a change agent for C.I. Designs.(especially in Europe & Asia)

Today

- Only 2 mil specs were created from the Falklands War lesson.(Mil-C-24640 & 25038/3)
- Multi-function wire & cable is the norm.
- Increased functionality = increased risk.
- There are materials that are flame, water and mechanical impact resistant and are also acceptable with respect to toxicity and their impact to humans.

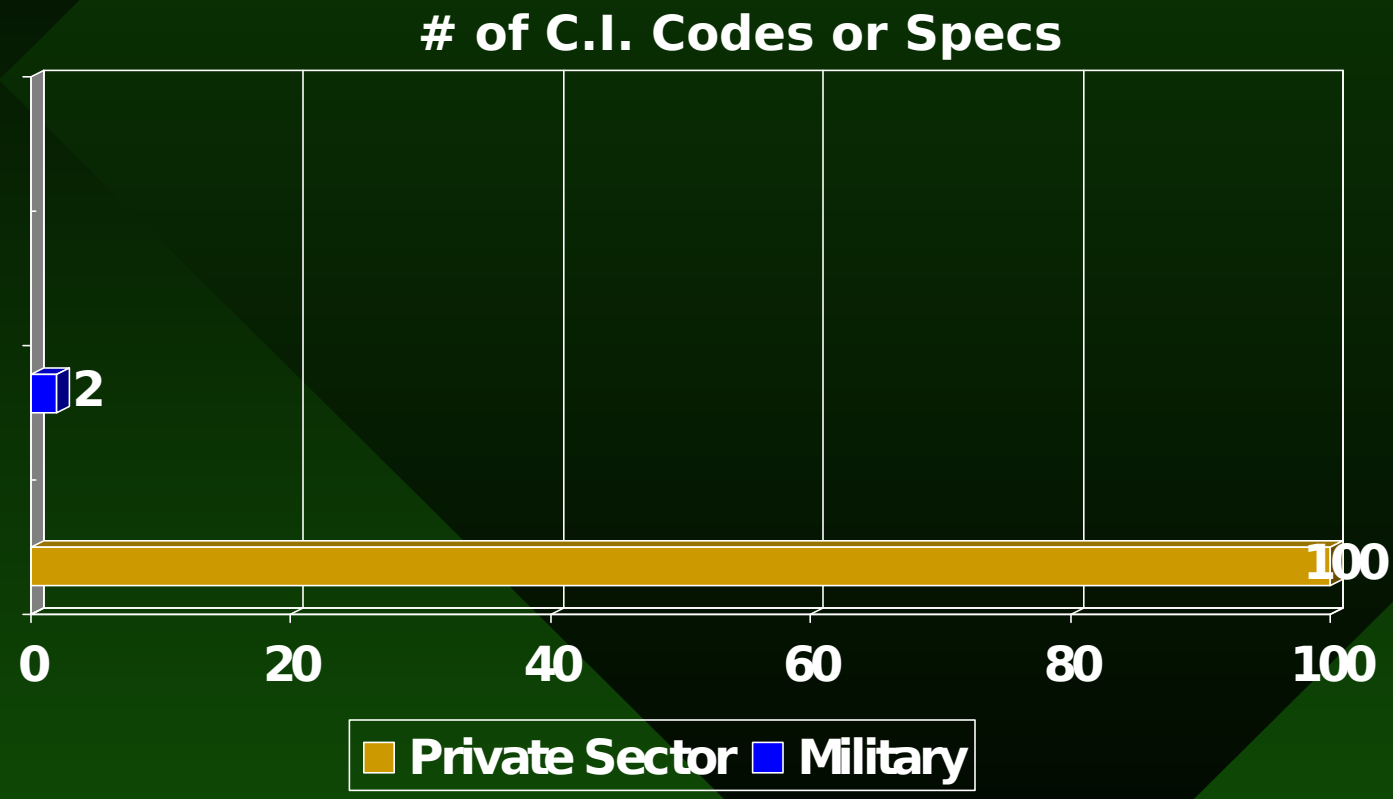
At Issue

- The current constructions of our military wire and cable systems are utilizing polymers and other forms of insulation that are unable to pass today's C.I. tests.
- Mindset: designers' main concerns are functionality, weight, diameter, cost and availability. However, if their background included evacuation & fire suppression operations then chances are I would not be speaking today .

Point #1

- The private sector has over 100 circuit integrity codes for emergency system wires & cables globally…the U.S. Defense Dept. has 2.
- Private Sector: IEEE, ASTM, U.L.; NFPA; NEC; CSA; BSI, European Codes; Japan; China, etc.
- To ensure that all our new technology imbedded into current and future systems works…C.I. should not be ignored.
- C.I. has far greater visibility & acceptance in the private sector.

Who is better protected ?



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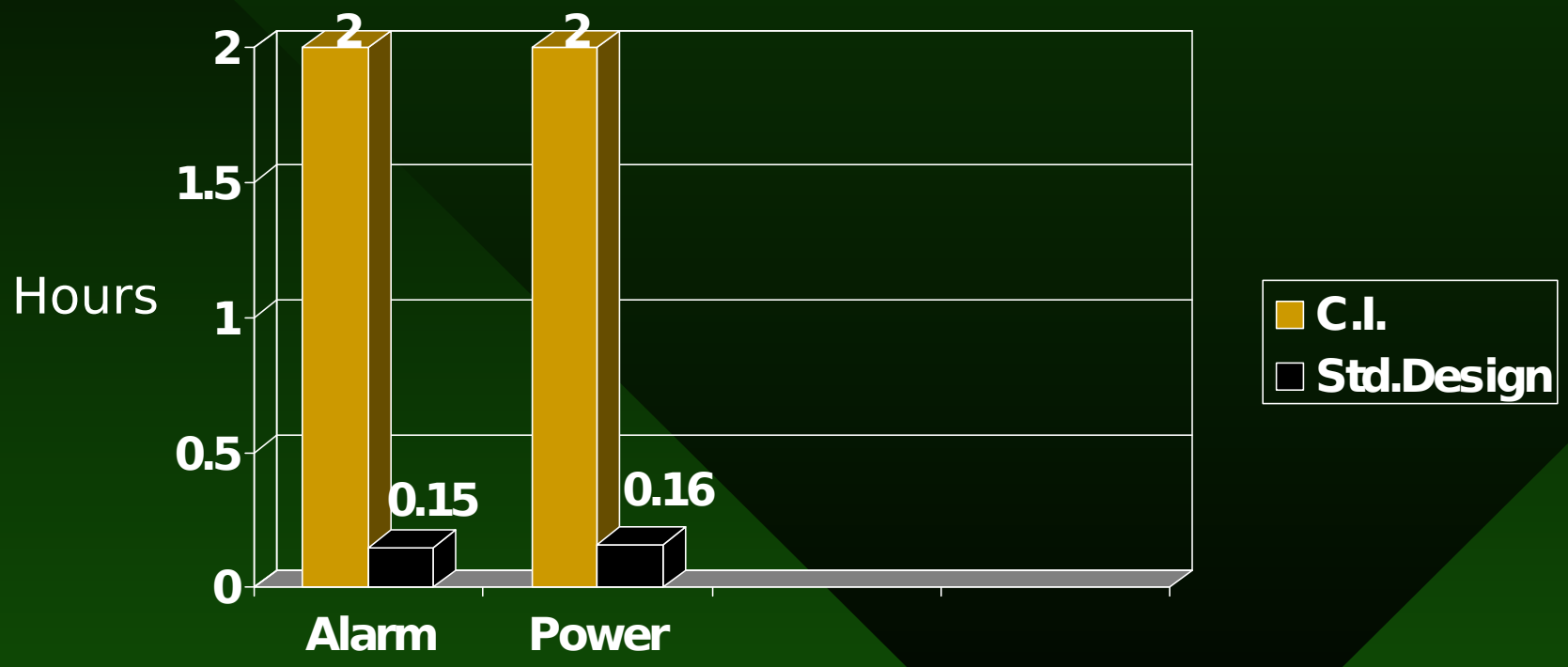
Point #2

- Legacy systems have been upgraded by use of combinations of conductive & fiber in the same cable. (i.e.: higher capability = higher risk)
- Future systems will have greater risk due to the imbedded “real-time” and remote operational features.

COMPARATIVE FACTS

- Standard alarm, communications & data wiring will fail in under 60 seconds. Power & signal cables in under 20 minutes.
- Standard C.I. Alarm, communications & data wiring will operate for a minimum of 2 hrs. (while subjected to flame, water and mechanical impact) !
- Some C.I. Constructions even fair better than wire imbedded in conduit.
- It has been proven that C.I. Wire & Cable reduces: Injuries by 75%; Fatalities by 66% & Loss of Property by 70%.

Comparative Test Results



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Lessons Learned in Iraq ?

- Communications lacked security…the patch: place secure SIPRNET terminals and U.S. operators on foreign ships…

  (DefenseNews Sept.8, 2003)

- The problem of C.I. Still existed because the wiring to the terminals were not of C.I. Design !

Point #3

- Is the daily functioning of our military systems (let alone during a war) any less important than those in a high rise apartment building ?
- Wireless systems are also vulnerable.
- Senate Bills: S2661 & S2664 address C.I. In the bills' Report !

What provides the performance ?

- Firox (specially formulated mica tape)

+

- Ceramifiable silicone compound

Summary

- The weak link in our emergency systems (and some standard mission critical ones as well) is the lack of C.I. designed wire & cable.
- The risk due to failure of multi-function cables must be managed.
- Scientific and empirical data support the rationale of using C.I. wire & cable for emergency systems.

Why use C.I. Wire & Cable Insulated With Firox ?

- C.I. Falls under the COTS category.
- Installed cost of C.I. Cable is 1/3 less than those installed in conduit.
- A wide variety is available to suit your application.
- Firox is the only mica tape that has been used on currently certified U.L.2196 (+ our 2 Mil-C specs previously mentioned) wire & cable.
- ✯ It will keep our military up and running at the most critical times !

Conclusion

- Reduce your emergency system risk with a simple, cost-effective and readily available solution: Firox insulated & certified C.I. Wire &